

REMARKS

The application has been reviewed in light of the Office Action mailed July 31, 2003. At the time of the Office Action, Claims 27-48 were pending in this application. Claims 1-26 and 49-117 were cancelled due to an election/restriction requirement. Claims 27-48 were rejected. Applicants have amended Claims 27, 30 and 44-47, and respectfully request reconsideration and favorable action in this case.

Drawing Objections

In amended Figure 3, the previously omitted reference numerals "760a", "770a" and "780a" have been added.

Claim Objections

Claim 27 was objected to by the Examiner for informalities, specifically, for containing grammatical errors. Applicants appreciate the Examiner careful review and have amended Claim 27 as required.

Claim Rejections Under 35 U.S.C. §112

Claims 30 and 44-48 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants have amended Claims 30, 44-47 to overcome the rejections under 35 U.S.C. §112, second paragraph. Applicants request withdrawal of all rejections and allowance of Claims 30 and 44-48, as amended.

Claim Rejections Under 35 U.S.C. §102

Claims 27, 28, 33, 34, 36, 44 and 45 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,063,352, issued to Theo Risse et al. (hereinafter "Risse"). Applicants respectfully traverse and submit that Claims 27, 28, 33, 34, 36, 44 and 45, as amended, are patentable over Risse.

Risse discloses a method of removing sulfur dioxide from a flue gas. As shown in the drawing, the apparatus takes "flue gas from a plant of the type described is treated in *uniflow* with a NaOH or KOH solution over the quenching stretch and, more particularly, sprayed with the alkali solution introduced via line 2." (Col. 5, lines 21-25; and Figure 1) (emphasis added)

Applicants' amended Claim 27 calls for various features including "a vertically-oriented shell, the shell having an upper end and a lower end, the shell further having a flue gas entry port located at the lower end and a flue gas exit port located at the upper end such that the flue gas enters the shell via the flue gas entry port and moves in counter-flow exchange to a fluid, the shell further having an interior cavity, a vertical axis, and an interior surface."

Applicants' amended Claim 44 calls for various features including "a shell having a first end and a second end, the shell including a flue gas entry port disposed at the first end and flue gas exit port disposed at the second end wherein a fluid moves in relation to the flue gas to provide counter-current exchange as the flue gas traverses through the shell, the shell further defined in part by an interior cavity and an interior surface."

Risse cannot anticipate amended Claims 27 and 44 because Risse fails to teach, disclose or suggest all elements recited by amended Claims 27 and 44. For example, Risse fails to teach, disclose or suggest "a vertically-oriented shell, the shell having an upper end and a lower end, the shell further having a flue gas entry port located at the lower end and a flue gas exit port located at the upper end such that the flue gas enters the shell via the flue gas entry port and moves in counter-flow exchange to a fluid, the shell further having an interior cavity, a vertical axis, and an interior surface" as recited by amended Claim 44. Additionally, Risse fails to teach, disclose, or suggest "a shell having a first end and a second end, the shell including a flue gas entry port disposed at the first end and flue gas exit port disposed at the second end wherein a fluid moves in relation to the flue gas to provide counter-current exchange as the flue gas traverses through the shell, the shell further defined in part by an interior cavity and an interior surface" as recited by amended Claim 44. Because Risse includes a uniflow treatment, Risse cannot anticipate Applicants' invention that creates a counter-current exchange between the upwardly moving flue gas with the fluid. Therefore, Applicants respectfully submit that amended Claims 27 and 44 are not anticipated by Risse.

Claims 28, 33, 34 and 36 depend from and provide further patentable limitations to amended Claim 27. Claim 45, as amended, depends from and provides further patentable limitations to amended Claim 44. Since amended Claims 27 and 44 are deemed allowable, Applicants respectfully request the Examiner to reconsider and withdraw the rejections and allow Claims 27, 28, 33, 34, 36, 44 and 45, as amended.

Claim Rejections Under 35 U.S.C. §103

Claims 29-32 and 46-48 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Risse in view of U.S. Patent No. 3,944,402, issued to Paul Cheremisinoff (hereinafter "Cheremisinoff"). Applicants respectfully traverse and submit that Claims 29-32 and 46-48, as amended, are patentable over Risse in view of Cheremisinoff.

Claims 29-32 directly or indirectly depend from and provide further patentable limitations to amended Claim 27. Claims 46-48 directly or indirectly depend from and provide further patentable limitations to amended Claim 44. Since amended Claims 27 and 44 are deemed allowable, Applicants respectfully request the Examiner to reconsider and withdraw the rejections and allow Claims 29-32 and 46-48, as amended.

Claims 35 and 37-43 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Risse. Applicants respectfully traverse and submit that Claims 35, 37-43 are patentable over Risse.

Claims 35 and 37-43 directly or indirectly depend from and provide further patentable limitations to amended Claim 27. Since amended Claim 27 is deemed allowable, Applicants respectfully request the Examiner to reconsider and withdraw the rejections and allow Claims 35 and 37-43, as amended.

Information Disclosure Statement

Applicants wish to draw to the Examiner's attention that in the Office Action mailed July 31, 2003, Applicants did not receive confirmation of consideration of the references cited in the Information Disclosure Statement and PTO 1449 Form filed August 7, 2001. Applicants hereby request the Examiner to confirm consideration of the timely filed Information Disclosure Statement by initially next to each reference listed on the attached PTO 1449 Form. For the convenience of the Examiner, a copy of the Information Disclosure Statement and PTO Form 1449, as timely filed in accordance with 37 C.F.R. §§ 1.97 and 1.98 on August 7, 2001, and return postcard date stamped by the mail room of the U.S. Patent and Trademark Office, is enclosed herewith.

SUMMARY

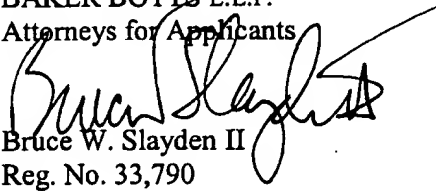
In light of the above amendments and remarks Applicants respectfully submit that the application is now in condition for allowance and early notice of the same is earnestly

solicited. Should the Examiner have any questions, comments or suggestions in furtherance of the prosecution of this application, the Examiner is invited to contact the attorney of record by telephone or facsimile.

Applicants believe no fees are due at this time, however, the Commissioner is hereby authorized to charge any fees to Deposit Account No. 02-0383 of Baker Botts L.L.P.

Respectfully submitted,

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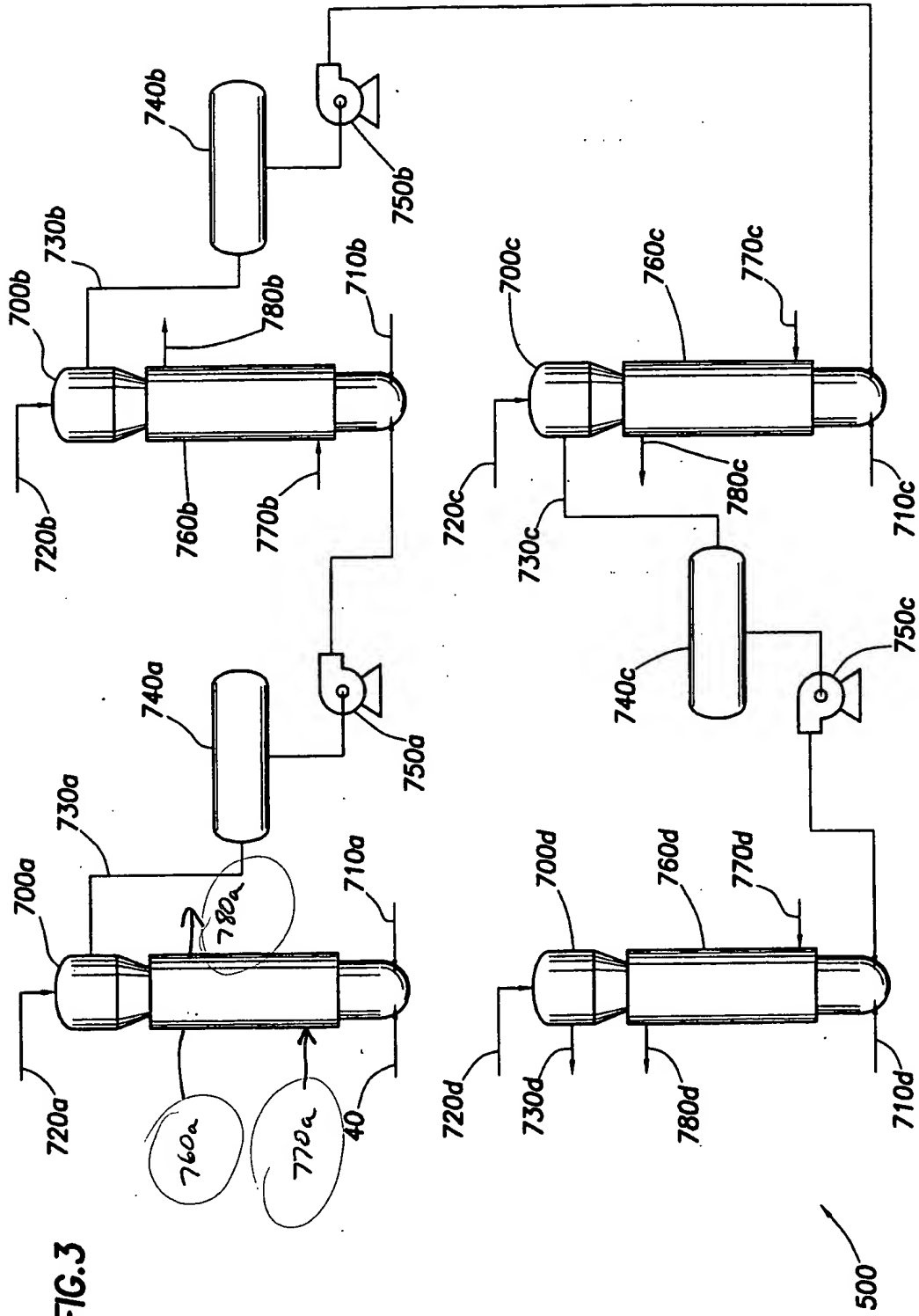


FIG. 3

Approved by
 Ex. 17a4
 1/24/04